examined since they are dependent claims, Applicants have canceled the claims. Therefore, Applicants have provided a complete reply to the final rejection of the restriction requirement.

Rejections Over Bhargava and Jaskie

The Examiner rejected claims 1-5, 25-26 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,455,489 to Bhargava (the Bhargava patent) in view of U.S. Patent 5,442,254 to Jaskie (the Jaskie patent). The Examiner cited the Bhargava patent for disclosing the present invention except for the claimed particle size range. The Examiner cited the Jaskie patent for disclosing that the specification of a desired particle size range is within the skill in the art. Applicants respectfully request reconsideration based on the following comments.

Applicants believe that there may be some misunderstanding regarding the two particular references. With respect to the Bhargava patent, Applicants have been unable to identify zinc oxides described in this application. The Examiner referred to column 2, lines 4-32 in the Bhargava patent for support of the disclosure of zinc oxide. However, the Bhargava patent only makes a reference to II-VI host semiconductors. However, II-VI semiconductors do not include zinc oxide. A II-VI semiconductor is a compound with a divalent compound bonded with a hexavalent compound, such as zinc sulfide. The zinc is the divalent compound, and the sulfur is the hexavalent compound. Applicants have included relevant pages from Introduction to Solid State Physics (seventh edition) by Charles Kittel for reference. Since the Bhargava patent does not teach or suggest zinc oxide, it is not relevant to the present rejection.

Similarly, the Jaskie patent does not disclose zinc oxide. Therefore, nothing in the Jaskie patent overcomes the deficiencies of the Bhargava patent. Since the Bhargava patent and the Jaskie patent do not teach or suggest zinc oxide material, they do not render the claimed invention obvious. Applicants respectfully request reconsideration of the rejection of claims 1-5,

25-26 under 35 U.S.C. §103(a) as being unpatentable over the Bhargava patent in view of the Jaskie patent.

Rejections Over Iga and Jaskie

The Examiner rejected claims 1, 7-9 and 27-30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,770,113 to Iga et al. (the Iga patent) in view of the Jaskie patent. The Examiner asserted that the Iga patent discloses the invention except for the particle size distribution range. The Examiner cited the Jaskie patent for disclosing that specification of a desired particle distribution range is within the skill in the art. Applicants respectfully request reconsideration of the rejection based on the following comments.

Assertions in a prior art reference do not support an anticipation or obviousness rejection unless the references place the claimed invention in the hands of the public. Beckman Instruments Inc. v. LKB Produkter AB, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989). "In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." Id. While a reference is prior art for all that it teaches, references along with the knowledge of a person of ordinary skill in the art must be enabling to place the invention in the hands of the public. In re Paulsen, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). See also In re Donohue, 226 USPQ 619, 621 (Fed. Cir. 1985). Under a factual inquiry relating to an obviousness analysis, objective evidence **must** be considered. See, MPEP §2141, and Graham v. John Deere, 383 U.S. 1, 148 USPQ 459 (1966).

The Iga patent does not disclose particle size distributions. In addition, the Jaskie patent does not specifically describe a range of particle sizes. The Examiner indicated that the Jaskie patent taught that the specification of a desired particle size range was within the skill in the art. See the Jaskie patent at column 7, lines 34-40. Since the Jaskie patent is silent with respect to particle size distributions, Applicants believe that the Examiner has failed to establish prima facie obviousness. Assuming arguendo that the Jaskie patent inherently discloses particle size

distributions within the claimed size ranges, Applicants believe that the Jaskie patent has failed to establish an appropriate approach for the production of the particle size distributions.

The Jaskie patent speculates that a form of "wet filtration" can be used to separate particles with a specified average particle size. This "wet filtration" evidently is based on analogy to standard chemical chromatography techniques, in particular thin layer chromatography. The Jaskie description seems to be based on an adaptation of chemical chromatography techniques to the separation of inorganic solid nanoparticles. However, separation of solid inorganic particles by chemical chromatography is not an established procedure. Efforts to try to get the wet filtration techniques to work would require fundamental research in particle dispersion formation, material selection and processing conditions. The Jaskie patent provides no guidance on any of these principles. The amount of research required to practice the techniques suggested in Jaskie patent undoubtedly would be enormous and clearly would be undue experimentation. The techniques may not ever work since the principles required to induce the desired separation are unknown. Thus, there is no reasonable expectation of success that the nanoparticles could be separated by molecular weight using the speculative description proposed in the Jaskie patent. Because of these severe deficiencies, the Jaskie patent does not place the public in possession of Applicants' claimed invention because undue experimentation is required to practice the invention, and there is no reason to expect the approach to necessarily ever work.

In contrast, Applicants' particle production approach forms a narrow distribution of particle sizes during the formation of the particles. Thus, no separation of the particles is needed. Since the Jaskie patent does not place the public in possession of Applicants' claimed invention, the Jaskie patent does not render Applicants' claimed invention obvious. To further support Applicants' position that chromatographic techniques are not established in the inorganic nanoparticle field, Applicants submitted a Declaration by Professor Singh in the corresponding parent application, 08/962,362. A copy of Professor Singh's Declaration and Resume are enclosed with this

Amendment for support of Applicants' assertions regarding the shortcomings of the disclosure in the Jaskie patent.

Since chromatographic techniques are not established in the inorganic nanoparticle field, Applicants further obtained a Declaration from Professor Bricker, who was able to evaluate the disclosure in the Jaskie patent from the perspective of an expert in chromatography as a separation technology. Professor Bricker is knowledgeable in separation technologies similar to the "wet filtration" approaches described in the Jaskie patent at column 7, lines 28-40. These separation techniques were developed for the separation of chemical species. In addition, these techniques have been generalized for the separation of biological macromolecules, which have a nanometer size scale. Dr. Bricker's Declaration presents an explicit and clear explanation of why the process described in the Jaskie patent cannot and will not work for the intended purpose.

Professor Bricker's Declaration is specifically directed to extreme deficiencies of the wet filtration approach described in the Jaskie patent. Professor Bricker's Declaration also describes why other chromatographic techniques, including well-established methods, would not be expected to accomplish the extremely fine separation needed to obtain the claimed invention. A copy of Professor Bricker's Declaration and Resume submitted in the parent case, 08/962,362, are enclosed with this Amendment.

The Declarations by Professor Singh, a knowledgeable person in nanoparticle technology, and Professor Bricker, a knowledgeable person in chromatographic techniques, provide objective evidence that support Applicants' arguments that the Jaskie patent did not enable the production of Applicants' claimed invention. Thus, **Applicants have presented clear objective evidence that the Jaskie patent does not enable the production of Applicants' claimed invention.** Applicants note that neither Professor Bricker nor Professor Singh have any interest in the outcome of the present application. The Iga patent does not make up for the deficiencies in the Jaskie patent.

The aggregate evidence clearly supports a conclusion that the record as a whole does not support a finding of obviousness. Applicants respectfully request withdrawal of the rejection of claims 1, 7-9 and 27-30 under 35 U.S.C. §103(a) as being unpatentable over the Iga patent in view of the Jaskie patent.

CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

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